PO Box 2021
Roanoke, VA 24022-2121
703 985 2300

OVERNIGHT

AEP
APPALACHIAN POWER

U.S. EPA
Region III
841 Chestnut Building
Philadelphia, PA 19107

Re: Appalachian Power Company
Mountaineer Plant
Initial Written Report to Establish
Continuous Release of Ethylene Glycol

December 8, 1992

Dear Sirs:

Attached please find the necessary documentation to establish a continuous release of ethylene glycol from the Appalachian Power Company Mountaineer Plant located near New Haven, West Virginia. This documentation is intended to constitute the Initial Written Report required by 40 CFR Section 302.8(c)(2) to allow your agency to determine whether any further response is needed and to satisfy the Company's obligations under Sections 103(a) and (b) of the Comprehensive Environmental Response, Compensation, and Liability Act. An initial telephone notification regarding the release that is the subject of this report was made to the National Response Center on November 9, 1992, and was assigned Case Number 144022.

If you have any questions, please call Mr. Timothy P. Mallan of my staff at (703) 985-2367.

Sincerely,

Robert J. Robinson

Robert J. Robinson
Environmental Affairs Director

RJR:d
Attachments

DISCUSSION OF CONTINUOUS RELEASE OF ETHYLENE GLYCOL AT APPALACHIAN POWER COMPANY'S MOUNTAINEER PLANT, NEW HAVEN, WEST VIRGINIA

Recent changes to the Federal Clean Air Act (CAA) resulted in a number of materials being listed as Hazardous Air Pollutants (HAPS). As any substance listed in CAA Section 112(b) is also a hazardous substance under The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the release of any of these newly listed materials to the environment now requires reporting according to CERCLA Section 103 (a). For those materials for which reportable quantities (RQs) have not been established, the default RQ of one pound applies.

One of the materials so listed is ethylene glycol (CAS No. 107-21-1), the primary ingredient in antifreeze and deicing agents. This presents a particular administrative problem at many coal fired steam electric power plants where ethylene glycol based deicers are used on coal conveyor belts during cold weather months.

During sub-freezing weather the belts used to carry coal from storage and unloading areas can become stiff due to the presence of water in the coal, precipitation, etc. This stiffness can retard the belt movement leading to reduced efficiency and the possible shut down of the conveyance operation. Such a shut down could result in the need to remove the associated generating unit from service.

To prevent this, deicing agents are periodically sprayed on the conveyor belts. At Appalachian Power Company's Mountaineer Plant, the application of deicer occurs inside eight different coal handling stations. These coal handling stations are enclosed sheds with concrete floors located at the turn-over points for the conveyor belts. The deicer is sprayed directly onto the belt prior to the coal placement. Any excess deicer drips onto the floor where it can be cleaned up by plant personnel. None of this material is released into the environment at this point as this is considered to be a totally enclosed process.

Once the belt moves from the coal handling station and coal is placed onto the belt, the majority of the deicing agent is absorbed into the belt or into the conveyed coal. It is possible though, for small amounts of the deicer to drip from the belts onto the ground during this operation. While this amount cannot be accurately quantified, there is no doubt that the quantity that drips from the belt will be far less than 1% of the total applied. However, the RQ for ethylene glycol is only one pound in a 24 hour period (an amount equal to approximately one pint of deicing solution). It is our conclusion that, during regular application, at least this amount is being released through dripping from the belts.

This release is totally contained within plant property and potentially affects no persons outside of the plant boundary. As the deicer is intentionally applied in a specified manner and according to an established procedure, we conclude that the release is continuous and stable in quantity and rate as defined at 40 CFR 302.8. We also conclude that, due to the minimal nature of this release, a single notification to the Environmental Protection Agency will provide the agency with sufficient information to allow an evaluation of the need for any further response.

Following this discussion is a listing of the information required to establish a continuous release in accordance with 40 CFR 302.8(e). Note that in accordance with 40 CFR 302.8(d) an initial telephone report regarding this release was made on November 9, 1992.

INFORMATION REQUIRED BY 40 CFR SECTION 302.8(e)

1. FACILITY INFORMATION:

NAME: Appalachian Power Company, Mountaineer Plant

LOCATION: Mason County, West Virginia, one mile south of the town limits of New Haven on U.S. Route 33

LATITUDE: 38° 58' 48"

LONGITUDE: 81° 53' 15"

NATIONAL RESPONSE CENTER CASE NUMBER: 144022

COMPANY DUN AND BRAD STREET NUMBER: 00-794-1537

PERSON IN CHARGE OF FACILITY: C. A. Powell, Plant Manager
(304) 882-2151

2. POPULATION DENSITY:

Within a one mile radius of the plant, there is a population of greater than 1,000 persons.

3. SENSITIVE AREAS IN PLANT VICINITY:

a) Within one mile of the plant (i.e., the area in which the continuous release takes place) are the following sensitive areas:

Ohio River Mainstem
Several small wetland areas (both adjacent wetlands along river bank and isolated wetlands).

b) Within one mile of the plant boundary (but greater than one mile from the souce of the continuous release:

Philip Sporn Plant (commercial steam electric power plant)
American Alloy Plant (manufacturing facility)
New Haven Grade School
River Bend Place Adult Housing Unit

4. HAZARDOUS SUBSTANCE RELEASE INFORMATION:

(A) NAME OF SUBSTANCE: Ethylene Glycol

CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER: 107-21-1

MIXTURE COMPONENTS: See Appendix I: Material Safety Data Sheet, the solution being used is called Ice Free Conveyor (TM).

(B) UPPER AND LOWER RANGE OF THE NORMAL BOUNDS OF THE RELEASE:

On a 24-hour basis, it is possible that, due to warm weather conditions, there will be a zero use and, therefore, a zero release of this material. The maximum daily use (upper bound) of this material would be 150 gallons or 1,070 pounds of ethylene glycol. Referring to the discussion at the beginning of this report in which the Company estimates that a quantity somewhat less than 1% of the total use could be released to the environment, yields an upper bound for the release quantity of 1.5 gallons or approximately 11 pounds.

(C) SOURCE OF THE RELEASE:

The deicing material is applied to the coal conveyor at a total of eight (8) separate points. Although the majority of this material is absorbed into the coal or onto the surface of the conveyor belt, it is probable that small quantities drip onto the ground. The most probable location for this dripping is immediately following the application points. The diagram attached as Appendix II shows the location of these application points. The deicer is applied at the following locations: barge unloader, Stations 5, 6, 7S, 7, 8, 9, 10.

(D) FREQUENCY AND SOURCE FRACTION FOR THE RELEASE:

Deicing is performed when the outside temperature goes below 28°F. The typical application season is November 1 to March 1. More severe weather requires a longer application period. During this time application is on a 24-hour basis. Deicing is performed periodically during the times:

November 1 to December 15 - 0700 - 2300
December 15 to March 1 - 24 hours/day

Regarding source fraction, each of the application points is designed and maintained according to a standard practice. Therefore, each point would be expected to contribute in an approximately equal proportion to the total release, except for the barge unloading station, which is only used during infrequent but anticipated unloading operations.

(E) BASIS FOR STATING THAT THE RELEASE IS CONTINUOUS AND STABLE IN QUANTITY AND RATE:

The release for which this report is being provided involves the intentional spraying of ethylene glycol-based deicing agent onto coal yard conveyor belts at a steam electric power plant. This is a routine function performed to keep the belts from stiffening due to ice formation during cold weather. After the application of the deicing agent, it is possible for small amounts of the material to run off of the belt and to drip onto the ground. This dripping onto the ground could be

considered to be a release as defined in CERCLA. It should be noted this release will only occur after the application of this material and this application is intentional and done either on a specific application schedule or in response to specific weather condition. The Company concludes that this release is continuous as intended in 40 CFR Section 302.8(b) wherein continuous is defined as, "...a release that occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." [Emphasis Added] The Company also concludes that the release is stable in quantity and rate as contemplated in Section 302.8. All releases covered under this report are predictable and regular in that during specific weather conditions, it will be necessary to apply deicer at a predetermined rate at specified application points to ensure the operation of the coal conveyor system, which is an integral and necessary process for the operation of the plant. None of the releases covered by this report are the result of malfunctions or upset conditions but are a part of the normal operation of the plant.

(F) ESTIMATE OF TOTAL AMOUNT RELEASED IN PREVIOUS YEAR:

Estimated total usage for previous year is 3,000 gallons (21,292 pounds of ethylene glycol). Of this use, the plant estimates that less than 1% is released to the environment. Therefore, we conclude that less than 30 gallons (213 lbs.) was released at the entire facility during the previous year.

(G) ENVIRONMENTAL MEDIUM AFFECTED:

All of the ethylene glycol released from the conveyors would drip onto the ground under the conveyors. Most of these areas consist of undeveloped ground surface, some of which is vegetated. In some areas, road surfaces may be impacted. All of the area around the conveyors are served by a stormwater system leading to one of two collection sumps (coal yard sumps). Flow from these sumps are to the plant's main wastewater treatment system in which any remaining ethylene glycol should be removed by adsorption and co-precipitation with slurried coal combustion by-products.

As the affected medium is a ground surface, the following list of all public water supply wells within two (2) miles of the plant boundary is provided:

1. Mountaineer Plant Drinking Water Well #1 and Well #2
2. New Haven Drinking Water Well #1 and Well #2
3. Philip Sporn Deep Wells #3, #5, #6
4. American Alloy Plant Water Supply Well
5. Racine Water Supply Well #1 and Well #2
6. Syracuse Water Supply Well #1 and Well #3

(H) CERTIFICATION STATEMENT:

The above information is accurate and current to the best of my knowledge and it is the opinion of those familiar with the regulations and definitions contained at 40 CFR Section 302.8 that the release that is the subject of this report is continuous and stable in quantity and rate.

H. E. Rhodes, Jr.
Vice President

APPENDIX I

MATERIAL SAFETY DATA SHEET

FOR

ICE FREE CONVEYOR®

Midwest Industrial Supply, Inc.
P.O. Box 8431, Canton, Ohio 44711
Material Safety Data

SECTION - I

TRADE NAME: ICE FREE CONVEYOR®
CHEMICAL NAME: ETHYLENE GLYCOL BASE WINTER AGENT
SYNONYMS: WINTER OPERATING AGENT FOR CONVEYORS
CHEMICAL FAMILY: GLYCOLS
MOLECULAR WEIGHT: N/A CAS REGISTRY NO.: MIXTURE
FORMULA: A solution of ethylene glycol and proprietary ingredients.

SECTION II - INGREDIENTS

Listed Here Are Hazardous And Toxic Ingredients According To OSHA "HAZARD COMMUNICATIONS ACT 29 CFR 1910. 1200"

NAME	CAS REGISTRY NO.	%	TLV	TOXICOLOGICAL DATA
ETHYLENE GLYCOL	107-21-1	**	50 PPM	Acute Oral LD_{50} (Rat) 4.0g/kg Human Lethal Dose 1500 mg/kg Primary skin irritant (Rabbit) mildly irritating 0.5-1.0/8.0 Primary eye irritant (Rabbit) practically non-irritating 15-25

**TRADE SECRET

SECTION III - PHYSICAL DATA

Boiling/Melting Point @ 760 mm Hg: 387°F
Vapor Pressure mm Hg @ 20°C: 0.06 pH: 9-11
Specific Gravity or Bulk Density: 1.15 x 8.3 ≈ 9.5 lbs/gal
Solubility in Water: complete
Appearance: greenish brown liquid
Odor: characteristic glycol odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): N/A

EXTINGUISHING MEDIA: Water Fog, Alcohol Foam, CO_2, Dry Chemical. Do not use direct water stream

SPECIAL FIREFIGHTING PROCEDURES: Avoid breathing vapors or fumes of heated or burning product, wear self-contained breathing apparatus and turn out gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

EMERGENCY TELEPHONE NUMBER: 216-456-3121 (PLANT) or
216-453-0666 (IF NO ANSWER AT PLANT)

These numbers are available days, nights, weekends, and holidays.

SECTION V - HEALTH HAZARD DATA

HMIS				NFPA			
Health:	3	Reactivity:	0	Health:	1	Reactivity:	0
Flammability:	1	Special:	1	Flammability:	1	Special:	1

WARNING STATEMENT

DANGER! HARMFUL OR FATAL IF SWALLOWED
MAY CAUSE KIDNEY AND NERVOUS SYSTEM DAMAGE
MAY CAUSE EYE IRRITATION

CONTAINS ETHYLENE GLYCOL WHICH MAY CAUSE BIRTH DEFECTS BASED ON LABORATORY ANIMAL DATA

POTENTIAL HEALTH EFFECTS

	EYE	SKIN	INHALATION	INGESTION
Primary Route of Exposure:	X	X	X	-

EFFECTS OF OVEREXPOSURE

Acute

Eyes: May cause irritation, experienced as mild discomfort and seen as sligh excess redness of the eye.

Skin: No adverse effects expected from absorption of material through the sk:

Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and di: comfort, seen as local redness and swelling.

Inhalation: Vapors or mist, generated from heating the material or as from exposur in poorly ventilated areas or confined spaces, may be irritating and cause discomfort in nose and throat, nasal discharge and coughing. Prolonged overexposure may cause difficulty breathing, headache, nausea vomiting, and drowsiness.

Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of material.

Ingestion: Toxic. Causes headache, weakness, confusion, loss of coordination, dizziness, difficulty walking, nausea, vomiting, decreased blood pressure, increased heart rate, pulmonary edema, kidney failure, unconsciousness, convulsions, and coma. Symptoms may be delayed. Severe poisoning may cause death.

Sensitization Properties: Unknown.

Chronic: Repeated ingestion may cause kidney damage.

Medical Conditions Aggravated by Exposure: Repeated overexposure may aggravate existing kidney disease.

Repeated overexposure may aggravate or enhance existing nervous dysfunction produced by disorders known to cause nervous system damage, such as diabetes, alcohol or drug abuse, and Parkinson's disease.

SECTION V - HEALTH HAZARD DATA (cont.)

EFFECTS OF OVEREXPOSURE (cont.):

Because of its irritating properties, repeated skin contact may aggrav an existing dermatitis (skin condition).

Other Remarks: Ethylene glycol is toxic when swallowed. A lethal dose for an adul 1-2 ml per kilogram, or about 4 ounces (one-half cup). Symptoms incl staggering, slurred speech, loss of coordination, confusion, faintnes nausea, vomiting, increased heart rate, difficulty breathing, difficu seeing, convulsions, and collapse. Symptoms may be delayed. Decreas urine output, kidney failure, and nervous system damage may also occu

FIRST AID PROCEDURES

EYES: Immediately flush eyes with lots of running water for 15 minutes, lifting th upper and lower eyelids occasionally. Get Medical Attention.

INHALATION: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

SKIN: Wash affected areas with soap and water. Remove contaminated clothing & was before reuse. If irritation develops, consult a physician.

INGESTION: Induce vomiting and get immediate medical attention. (Never give fluid induce vomiting if patient is unconscious or having convulsions.)

OTHER INSTRUCTIONS: NOTE TO PHYSICIAN: Ethylene Glycol poisoning may initially produce behavior changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. Renal damage or failure with metabolic acidosis are l signs of poisoning. Immediate treatment, may reduce toxic effects, supplemented, if necessary with hemodialysis. Intravenous Ethanol in Sodium Bicarbonate solution is a recognized antidote; other antidotes h been reported for Ethylene Glycol poisoning. Contact a poison center f further treatment information.

(INSERT LOCAL POISON CONTROL TELEPHONE NUMBER)

SECTION VI - REACTIVITY DATA

STABILITY: STABLE

MATERIALS TO AVOID: Strong oxidizing agents, strong acids & alkalis

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Does not occur

CONDITIONS TO AVOID: Heat, sparks, open flame

CORROSIVE TO METAL: NO OXIDIZER: NO

SECTION VII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION: If splashing can occur use chemical goggles.

SKIN PROTECTION: Wash exposed skin with soap and water. Soiled work clothing shoul be laundered.

RESPIRATORY PROTECTION: Airborne concentrations should be kept to lowest levels possible. Avoid breathing fumes or vapors. See exposure limit below for applicable permissable concentrations.

VENTILATION: LOCAL EXHAUST: Should be adequate to meet occupational exposure limit

PROTECTIVE CLOTHING: Use rubber gloves

EXPOSURE LIMIT: 50ppm STEL-Ceiling (OSHA and ACGIH) for ethylene glycol.

SECTION VIII - ENVIRONMENTAL DATA

AQUATIC TOXICITY RATING: Bluegill (Lepomis macrochirus) 96-Hr. Static LC_{50}:1400mg/l Insignificant hazard.

SPILL AND LEAK PROCEDURES: Contain spill if possible, contain with absorbent materials and shovel up. Clean up with cool water. Cl up quickly as spills constitute a shipping hazard.

WASTE DISPOSAL METHOD: This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded its purchased form. Incinerate or bury at a licensed facili Discharge to sewer systems with adequate treatment and prior approvals acceptable.

CONTAINER DISPOSAL: It is recommended that product labels be preserved on drums until they are cleaned or renovated at a licensed facility. Do not re-use drums. Do not weld on drums.

SECTION IX - SHIPPING DATA

D.O.T. PROPER SHIPPING NAME (49CFR172.101): Not Regulated

HAZARDOUS SUBSTANCE (40CFR116): N/A

REPORTABLE QUANTITY (RQ):

D.O.T. HAZARD CLASSIFICATION (49CFR172.101): N/A
PRIMARY: None
SECONDARY: N/A

D.O.T. LABELS REQUIRED (49CFR172.101): None

D.O.T. PLACARDS REQUIRED: None

POISON CONSTITUENT (49CFR173.343): N/A

BILL OF LADING DESCRIPTION: Liquid ice prevention compound, proprietary (ethylene glycol base)

SECTION X - REGULATORY INFORMATION

A. SARA TITLE III

Title III Section 302/304 Extremely Hazardous Substance:

Component	CAS No.	Percent	RQ (lbs)	TPQ (lbs)
None				

CERCLA Section 102(a) Hazardous Substance

Component	CAS No.	Percent	RQ (lbs)
Ethylene Glycol	107211	75.00	

Title III Section 311 Hazard Categorization

Acute	Chronic	Fire	Pressure	Reactive	Not Applicable
X	X	-	-	-	-

Title III Section 313 Toxic Chemicals

Component	CAS No.	Percent
Ethylene Glycol	107211	75.00

B. WHMIS CLASSIFICATION

Class D, Div 2, Subdiv A: Materials Causing Other Toxic Effects - Very Toxic (Teratogenicity)

C. MICHIGAN CRITICAL MATERIALS

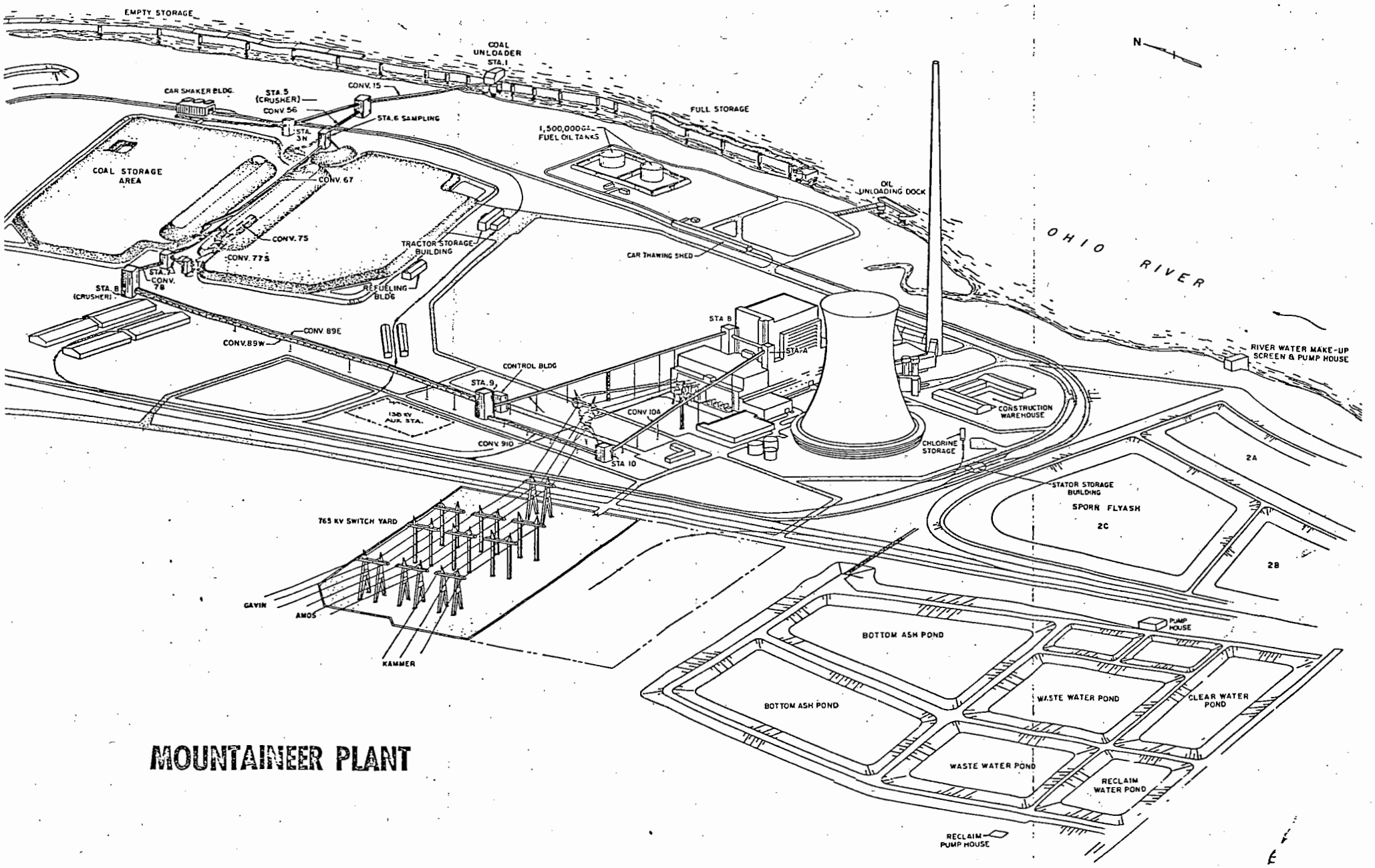
No critical materials present.

OTHER INFORMATION

N.D. - Not Determined N.A. - Not Applicable N.T. - Not Tested

APPENDIX II

MOUNTAINEER PLANT
LAYOUT SKETCH SHOWING LOCATION OF
COAL HANDLING STATION



MOUNTAINEER PLANT